

**Remarks:**

Claims 2-17 are pending in this application. Of the above claims 5-14 are withdrawn from consideration.

Claims 2-4 and 15-17 were rejected.

Claims 5-14 are withdrawn from consideration. Claim 17 was rejected under 35 USC 112, first paragraph, as failing to comply with the written description requirement because “graphite nanoparticles and nanoparticles of silicon carbide SiC is not supported by the specification. In the present amended world “**nanoparticles**” were deleted. In view of the amendment reconsideration and withdrawal of the objection of the claim 17 respectfully requested.

Claims 2-4 and 15-17 were rejected are rejected under 35 U.S.C. 103(a) as being unpatentable over Brupbacher et al. (US 5,059,490).

This rejection is respectfully traversed for the following reasons.

For an obviousness rejection to be proper, the Patent Office must meet the burden of establishing a prima facie case of obviousness. The Patent Office must meet the burden of establishing that all elements of the invention are disclosed in the cited publications, which must have a suggestion, teaching or motivation for one of ordinary skill in the art to modify a reference or

combined references. *In re Sang Su Lee*, 277 F.3d 1338, 61 USPQ2d 1430 (Fed. Cir. 2002).

The cited publications should explicitly provide a reasonable expectation of success, determined from the position of one of ordinary skill in the art at the time the invention was made. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988); *In re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970).

The Examiner is thanked for the detailed Office Action and this reference USP 5,059490. Claims 15 and 16 were canceled.

New independent claim 18 was added. This claim incorporates the subject matter of original independent claim 15 and depended claim 16.

Claims 2, 3, and 4 have been amended to depend from new independent claim 18.

No new matter has been added, and no new issues with respect to patentability have been raised.

The examiner opposed a prior art document (US Patent 5059490, Brupbacher et al.) that was not considered in our discussion with the USPTO before. The Brupbacher patent contains some hard particles mentioned in our original Application, too. Brupbacher et al. does not disclose, teach or suggest “a fully-dense discontinuously-reinforced titanium matrix composite material comprises a matrix of titanium or titanium alloy as a major component, ceramic and/or intermetallic hard particles dispersed in the matrix in an amount of 50% by volume or less TiC, B<sub>4</sub>C, SiC, ZrC, TaC, WC, NbC, TiAl, Ti<sub>3</sub>Al, TiAl<sub>3</sub>, TiAlV<sub>2</sub>, complex carbide particles selected from the group consisting of Ti<sub>4</sub>Cr<sub>3</sub>C<sub>6</sub>, Cr<sub>3</sub>C<sub>2</sub>, Ti<sub>2</sub>AlC, Al<sub>4</sub>C<sub>3</sub>, V<sub>2</sub>C, (Ti,V)C, VCr<sub>2</sub>C<sub>2</sub>, and V<sub>2</sub>Cr<sub>4</sub>C<sub>3</sub>,

**additionally comprises complex carbide-silicide and carbide-aluminide particles selected from the group consisting of Ti<sub>3</sub>SiC<sub>2</sub>, Ti<sub>3</sub>AlC<sub>2</sub>, Al<sub>4</sub>SiC<sub>4</sub>, Al<sub>4</sub>Si<sub>2</sub>C<sub>5</sub>, and Al<sub>8</sub>SiC<sub>7</sub>** as claimed now in amended independent Claim 18, and **also additionally comprises intermetallic**

**particles selected from the group consisting of  $\text{Al}_8\text{V}_5$ ,  $\text{TiCr}_2$**  as claimed now in amended

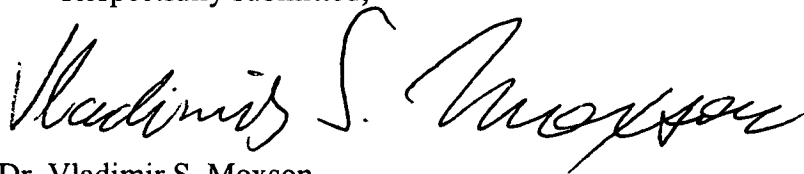
Claim 4. Nowhere in Brupbacher et al. could such elements be found.

Applicants assert that Brupbacher et al. does not disclose, teach or suggest anything about titanium matrix composite material additionally comprises complex carbide-silicide and carbide-aluminide particles selected from the group consisting of  $\text{Ti}_3\text{SiC}_2$ ,  $\text{Ti}_3\text{AlC}_2$ ,  $\text{Al}_4\text{SiC}_4$ ,  $\text{Al}_4\text{Si}_2\text{C}_5$ , and  $\text{Al}_8\text{SiC}_7$ , as claimed in new independent claim 18, as well as intermetallic particles selected from the group consisting of  $\text{Al}_8\text{V}_5$ ,  $\text{TiCr}_2$  as claimed now in amended Claim 4. Therefore, Claim 18 and claim 4 are patentable over Brupbacher et al. under 35 U.S.C. 103(a). Allowance of Claim 18 is respectfully requested. New claim 19 are depended from new independent claim 18 and are supported by abstract and paragraph 0032 of the original specification. New Claims 18 and 19 are fully supported by specification. No new matter was added.

Entry of the present Amendment and allowance of the application is solicited.

Should any questions arise, the Examiner is encouraged to contact the undersigned.

Respectfully submitted,



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